



STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

April 1, 1983

#7075473

REGISTERED RETURN RECEIPT REQUESTED

Mr. Delbert D. Thomas, President
Shale Development Corporation
P. O. Box 44
Redlands, California 92373

RE: Shale Development Corporation
Sand Wash Oil Shale Test Program
ACT/047/005
Uintah County, Utah

Dear Mr. Thomas:

On March 24, 1983, the Board of Oil, Gas and Mining concurred with the Division's decision to issue a conditional tentative approval for the Sand Wash Oil Shale Test Program. Due to certain deficiencies which have yet to be resolved between Shale Development Corporation and the Division, final review of the mining and reclamation plan was not completed prior to the Board Hearing in March. Rather than hold up the placement of a public notice for the project, a conditional tentative approval is issued. This tentative approval and any forthcoming final approval will concern only the proposed surface disturbance of twenty (20) acres and the test program. In the event of any plans to expand the operation beyond the approved test program, a revised mine plan must be submitted to the Division. Also, due to the timing requirements of the Division, any mine plan revision must be submitted at least 120 days prior to the anticipated increase in activity.

The following concerns and conditions have been attached to this approval, and contingent upon Shale Development Corporation meeting said conditions and the Division receiving no substantial adverse public comment, a final approval may be issued.

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Rule M-3 (2)(f)

Some clarification is needed on the reclamation schedule as shown on Exhibit "C". Item number 2 does not show up on the schedule. Items 11, 12 and 13 are not defined in the schedule. Is reseeding to take place in the spring or in the fall?

Rule M-3 (3)

More clarification is needed in this area. How will the excavation of material be accomplished? What type of equipment will be used? Will any part of the excavation require the use of explosives? If so how and where will explosives be stored?

Rule M-10 (12)

The development of a successful revegetation plan is linked (by the applicant) to the use of test plots to identify necessary land treatments. These should be coordinated with the identification of important soils variables and their manipulation. Such factors as soil fertility amendments, soil replacement depths and the use of spent shale ("processing waste") as fill should be evaluated. Due to the apparently high salinity of processed shale, the potential for upward salt migration and its mitigation should be included in this test plot program.

What reason is there to assume that an adverse impact due to grazing will not occur?

Rule M-10 (14)

With regard to soil sampling, were composite samples taken? How many separate samples were analyzed? The electrical conductivity (EC) was reported at 1.6. Is this expressed as mmhos/cm? If so, it appears unrealistically low. Please redo this analysis and submit the results.

Please provide additional details on the scarification methods and implements to be used in the preparation of areas to be reclaimed.

To reiterate, the above concerns and conditions must be resolved before final approval will be given for this project. The following stipulations are a condition of final approval but will not preclude its being given. The Division requests that these stipulations be answered within 90 days of the receipt of this letter.

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STIPULATIONS

Stipulation 3-9-83-1 CY

Rule M-3 (2)(d)

A plan map must be submitted which shows post-mining contours for the area of disturbance. This will be a postreclamation map showing what the final proposed land contours will be.

Stipulation 3-9-83-2 TP

Rule M-10 (5)

The applicant states that "it is not anticipated that any highwalls will be generated." A commitment should be made that if any highwalls are generated, the operator will notify the Division and arrive at an approved plan for their mitigation.

Stipulation 3-9-83-3 TP

Rule M-10 (6)

Due to the high salinity, high pH and the general nature of the "processing waste" material, it is necessary that additional analyses be made. Such tests should include the content of sodium, calcium, magnesium, potassium, selenium and molybdenum, expressed as ppm or mg/l. The applicant shall commit to running these tests during the first months of operation and submitting the information in the requested form to the Division.

It is believed that since these materials will be used as fill and have a direct interface with the redistributed topsoil, the above information will be of value.

Stipulation 3-9-83-4 SL

Rule M-10 (12)

The applicant shall commit to submitting detailed test plot designs and monitoring practices to DOGM at least thirty (30) days prior to test plot implementation on retorted shale.

Stipulation 3-9-83-5 SL

Rule M-10 (12)

The applicant shall commit to submitting a final revegetation plan, as described in the Division's letter of December 13, 1983, under section M-10 (12), at least sixty (60) days prior to any final reclamation occurring on spent shale or fill banks.

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Stipulation 3-9-83-6 SL

Rule M-10 (12)

The applicant still needs to discuss reseeding of fill banks as requested in the Division's letter of December 13, 1983. Will revegetation take place as described in Exhibit E, or will test plots determine revegetation along fill banks?

Stipulation 3-9-83-7 TP

Rule M-10 (14)

A soil isopach map should be developed to assist in soil removal activities. This should be based on the data submitted in Exhibit F.

Stipulation 3-9-83-8 TP

Rule M-10 (14)

A soils balance sheet should be prepared and submitted to the Division for review. As a basis for such a balance sheet it appears from the data submitted that the applicant has approximately four inches of available material for reclamation. As an example this would mean (4 inches X 5 acres X 43,560 ft²/ac) or approximately 2,662 cubic yards of soil. Details for such a balance sheet or any other soils problems can be worked out with Tom Portle of the Division staff.

Based on the above approximation, it appears that "soils protection and storage" should be fully addressed by the applicant. This was originally requested in the Division's letter of December 13, 1983.

Stipulation 3-9-83-9 TP

Rule M-10 (14)

A soils map depicting all areas which will receive topsoil during reclamation, and to what depth, should be prepared and submitted to the Division. This will also aid the applicant in assuring the proper soil redistribution.

Stipulation 3-9-83-10 TP

Rule M-10 (14)

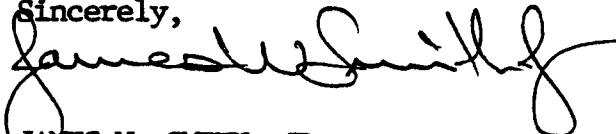
The applicant shall commit to testing soils after redistribution to assess the needs for fertility amendments. This analysis should include the parameters as outlined in the December 13, 1983 review letter.

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Concerning the reclamation surety, Mr. Ron Daniels, Deputy Director of the Division, reviewed with the Board of Oil, Gas and Mining the amount and form of surety which is acceptable to meet Division standards. The amount of surety as presented in the attached bond calculation has been approved by the Board. It has been determined that the form of the surety shall be a highly liquid asset such as a bond or a certificate of deposit. These details should be worked out with Pam Grubaugh-Littig of the Division so that the plan can be presented to the Board in April for final approval.

If you have any questions, please don't hesitate to contact me or Cy Young of my staff.

Sincerely,

A handwritten signature in black ink, appearing to read "James W. Smith, Jr.", with a stylized, flowing script.

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/CY:btb

Enclosure

cc: C. Young, DOGM
P. Grubaugh-Littig, DOGM

DIVISION OF OIL, GAS, AND MINING
BOND ESTIMATE

OPERATOR: Shale Development Corporation

MINE NAME: Sand Wash Project

LOCATION: State of Utah, Salt Lake Meridian, T11S, R18E

COUNTY: Uintah

DATE: March 3, 1983

NE $\frac{1}{4}$, Sec. 29 NW $\frac{1}{4}$ Sec. 33
SE $\frac{1}{4}$ Sec. 29 SW $\frac{1}{4}$ Sec. 28

Operation	Amount	Rate	Cost
CLEAN-UP			
1. Removal of structures & equipment.	240 hours	\$10/hr.	2400
2. Removal of trash & debris.	12T Crane	\$430/day	\$430
3. Leveling of ancillary facilities pads and access roads.	Equipment hauling contract 120=8x15	1650	1650
	1 equip. operator	\$310/day	120
	8 days (truck and driver)		\$2480
REGRADEING & RECONTOURING			
1. Earthwork including haulage and grading of spoils, waste and overburden.	5000 c.y.	\$1.05/c.y.	\$5250
2. Recontouring of highwalls and excavations.			
3. Spreading of soil or surficial materials.			
STABILIZATION			
1. Soil preparation, scarification, fertilization, etc.	4 hrs. operator	\$10/hr	40
	Tractor 4 hrs.	\$20/hr	80
2. Seeding or planting.	Soil prep. 4 hrs	\$15/hr	60
3. Construction of terraces, waterbars, etc.	100# fertilizer	15/lb	15
	50# seed	\$200/lb	\$100
LABOR			
1. Supervision.	60 Hours	\$1650/hr	\$1,000
2. Labor exclusive of bulldozer time.			
SAFETY			
1. Erection of fences, portal coverings, etc.			
2. Removal or neutralization of explosive or hazardous materials.			
MONITORING			
1. Continuing or periodic monitoring, sampling & testing deemed necessary.	12 quarterly trips	\$250/trip	\$3000
		10%/contingency	16,625
			1662
			18,287
OTHER			
	1984 - \$20,116		
	1986 - \$22,127		
	1987 - \$24,340		